

In the Claims

The current status of all claims of the application follows:

17. (Currently Amended) A process for increasing the decolorizing activity of a layer silicate for treatment of oils, fats and waxes comprising the step of

treating [the] layer silicate, which has a pH value greater than 3.4, with an acid-producing microorganism until a pH value of not more than about 3.4 is obtained.

18. (Previously presented) The process of Claim 17 wherein the layer silicate comprises a smectite clay.

19. (Previously presented) The process of Claim 17 wherein the layer silicate comprises a montmorillonite clay.

20. (Original) The process of Claim 19 wherein the montmorillonite clay comprises a bentonite clay.

21. (Previously presented) The process of Claim 17 wherein the layer silicate comprises a palygorskite clay.

22. (Previously presented) The process of Claim 20 wherein the layer silicate further comprises a palygorskite clay.

23. (Original) The process of Claim 17 wherein the acid-producing microorganism comprises a sulfur-oxidizing bacteria.

24. (Original) The process of Claim 17 wherein the acid-producing microorganism comprises an iron-oxidizing bacteria.

25. (Previously presented) The process of Claim 23 wherein the sulfur-oxidizing bacteria comprises Thiobacillus thiooxidans.

26. (Previously presented) The process of Claim 24 wherein the iron-oxidizing bacteria comprises Thiobacillus ferrooxidans.

27. (Original) The process of Claim 17 wherein the acid-producing microorganism produces citric acid.

28. (Previously presented) The process of Claim 27 wherein the citric acid-producing microorganism comprises Aspergillus niger.

29. (Previously presented) The process of Claim 17 wherein the layer silicate is in the form of raw clay and wherein the process further comprises breaking up the raw clay into clumps with a size from about 0.5 cm to about 5 cm prior to treating the layer silicate.

30. (Previously presented) The process of Claim 17 further comprising adding the acid-producing microorganisms to an inoculant material prior to treating the layer silicate with the microorganisms which have been added to the inoculant material.

31. (Previously presented) The process of Claim 30 wherein the population of the microorganisms added to the layer silicate is from about 10^2 to about 10^{10} bacteria/g of the inoculant material.

32. (Previously presented) The process of Claim 17 further comprising maintaining the temperature of the layer silicate during treating within the range from about 20 to about 35°C.

33. (Previously presented) The process of Claim 17 further comprising maintaining the water content of the layer silicate

during treating within a range from about 15 percent by weight to about 70 percent by weight.

34. (Previously presented) The process of Claim 30 wherein the inoculant material added to the layer silicate comprises about 5 to about 20 percent of the overall composition after the inoculant material has been added.

35. (Previously presented) The process of Claim 17 further comprising mixing and aerating the layer silicate while it is being treated with the acid-producing microorganism.

36. (Previously presented) The process of Claim 35 wherein the treating process occurs for a period of time from about 1 to about 365 days.

37. (Previously presented) The process of Claim 17 further comprising adding nutrients for the microorganisms to the layer silicate prior to treating with the acid-producing microorganisms.

38. (Original) The process of Claim 37 wherein the nutrients added comprise sulfur-containing products.

39. (Previously presented) The process of Claim 17 further comprising adding small quantities of a dilute acid to the layer silicate prior to treating with the acid-producing microorganisms.

40. (Cancelled)

41. (Cancelled)

42. (Previously presented) The process of Claim 17 wherein the pH level is determined by suspending 8 parts of a sample of the

treated layer silicate in 100 parts of water and measuring the pH-value by means of a pH measurement electrode.

43. (Currently Amended) A process for increasing the decolorizing activity of a layer silicate for treatment of oils, fats and waxes comprising the steps of treating [the] layer silicate with a pH value greater than 4 with an acid-producing microorganism until a pH value of not more than 4 is obtained.

44. (Currently Amended) The process of Claim 43 wherein layered silicate is treated until the pH value is from about 2 to 4.

45. (New) A process for treatment of oils, fats or waxes comprising

activating a layered silicate, which has a pH value greater than 3.4, by treating it with an acid-producing microorganism until a pH for the layer silicate of not more than about 3.4 is obtained; and

treating the oils, fats or waxes with the activated layer silicate to increase their decolorizing activity.

Amendments to Claims

The applicant has amended Claims 17, 43 and 44 to clarify that the layer silicate, which is being treated with an acid-producing microorganism, has a pH greater than 3.4 (Claim 17) or 4 (Claim 43) or 2 to 4 (Claim 44) prior to treatment with the microorganism. The applicants have introduced this limitation into the claims to make it clear that the pH of the layered silicate is above that stated pH range prior to treatment with the microorganisms and is then reduced below that stated pH range as a result of treatment of the layer silicate with the acid-producing microorganisms. Bases for these amendments are impliedly present throughout the application and are specifically disclosed in Table I, see Examples 1 (comparison), Example 7 (comparison) and Example 9 (comparison).

The applicants have also added new Claim 45. This claim is a process for the treatment of oils, fats or waxes, which comprises activating a layer silicate, with a pH greater than 3.4 prior to activation, in the manner claimed in Claim 17 to increase its decolorizing activity and then treating oils, fats and waxes with the activated layer silicate. Basis for this amendment is contained throughout the application, is inherent from the original claims, as filed, and is disclosed on page 7, fourth line from the bottom and Tables I and II on pages 16 and 17, wherein the activated layer silicate is used for the treatment of rape-seed oil and soybean oil.

No new subject matter is introduced by any of these amendments. In addition, the amendments to the claims are made to clarify those claims and are unrelated to patentability.